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receiving in said extra-corporeal blood circuit blood to be purified;

measuring by said measurement device at least one operational and/or blood parameter of the received blood;

controlling, by said control unit, at least one of an infusion rate (Q_{spre}) of said upstream supply line and an infusion rate (Q_{spost}) of said downstream supply line, in response to said step of measuring in order to control said at least one operational and/or blood parameter.

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15. The method according to claim 14, wherein the operational and/or blood parameter is selected from the group consisting of trans-membrane pressure, hematocrit value and blood density.

16. The method according to claim 15, wherein said step of controlling includes increasing the infusion rate (Q_{spre}) of said substitution fluid through said upstream supply line relative to the infusion rate (Q_{spost}) through said downstream supply line when, in response to said step of measuring, it is determined that at least one of said trans-membrane pressure, said hematocrit value and said blood density is increasing.

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17. The method according to claim 15, wherein said steps of measuring and controlling are performed continuously during said blood purification.

18. The method according to claim 14, further comprising the step of selecting said infusion rates ($Q_{s\text{pre}}$, $Q_{s\text{post}}$) such that a substantially stationary limiting membrane is formed on a side of the membrane of the hemodialyser and/or hemofilter facing a chamber through which the blood flows.

19. The method according to claim 18, wherein upon termination of said blood purification, the limiting membrane is dissolved by changing a relation of said infusion rates ($Q_{s\text{pre}}$, $Q_{s\text{post}}$) of said substitution solution in the blood.

20. A hemodialysis and/or hemofiltration apparatus comprising:

an extra-corporeal blood circuit for receiving blood to be purified;

a hemodialyser and/or hemofilter communicating with said blood circuit;

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said blood circuit having an upstream supply line and a downstream supply line upstream and downstream, respectively, of said hemodialyser and/or hemofilter for supplying a substitution fluid, said upstream supply line having an upstream infusion rate ($Q_{s\text{pre}}$) and said downstream supply line having a downstream infusion rate ($Q_{s\text{post}}$);

a measuring device for recording at least one operational and/or blood parameter; and

a control unit connected to said measuring device for controlling said at least one operational and/or blood parameter by controlling at least one of said upstream and downstream infusion rates in response to data received from said measuring device.

21. The apparatus according to claim 20, further comprising a dialysis-fluid circuit in communication with said hemodialyser and/or hemofilter, wherein said measuring device includes pressure sensors arranged in said extra-corporeal blood circuit and the dialysis-fluid circuit, upstream and downstream of said hemodialyser and/or hemofilter, respectively.

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22. The apparatus according to claim 20, wherein said measuring device includes sensors arranged in said extra-corporeal blood circuit upstream and downstream of said hemodialyser and/or hemofilter for detecting a hematocrit value of the blood.

23. The apparatus according to claim 20, wherein said measuring device includes sensors arranged in said extra-corporeal blood circuit upstream and downstream of said hemodialyser and/or hemofilter for detecting a blood density.

24. The apparatus according to claim 20, further comprising pumps in said upstream and downstream supply lines, respectively, said pumps controlled by said control unit to control said infusion rate (Q_{spre}) and said infusion rate (Q_{spost}).

25. The apparatus according to claim 20, further comprising valves in said upstream and downstream supply lines, respectively, said valves controlled by said control unit to control said infusion rate (Q_{spre}) and said infusion rate (Q_{spost}).--